

a longer time to grind down the irregularities of the surface, which is best effected by rubbing them upon a piece of wet unpolished marble.

For the deeper cells Mr. Thwaites finds nothing so good as marine glue, which must be melted and dropped on the slip of glass, like sealing-wax, then warmed and flattened with a piece of wet glass : what is superfluous must be cut away with a knife, so as to leave only the wall of the cell ; should this become loose, it can easily be fixed by heating the other side of the slip of glass over a spirit-lamp and gently pressing. Before these cells are used, it is desirable to flatten them by rubbing gently upon a piece of wood and then upon the wet marble.

In using the cells, as small a quantity as possible of gold-size, of a thick consistence, should be laid on the wall of the cell, and also on the edge of the piece of thin glass ; and in covering up the cells, gentle pressure should be employed in order to squeeze out the superfluous fluid.

It would be a very useful thing for travellers to take with them the proper ingredients for preparing the two solutions for fresh and marine algæ. A portion of each species of alga might then be preserved in small phials carefully sealed and ticketed, which may be mounted and observed at leisure. The benefit of such a practice has been strongly impressed upon me during the examination of some highly curious foreign algæ which have lost many of their distinctive characters in drying.

M. J. BERKELEY.

On the Discovery of a Fossil Frog and Butterfly in the Gypsum Deposits of Aix. By M. COQUAND.

Among the fossils in my possession from the gypsum formation of Aix, a remarkable and very distinct impression of a reptile belonging to the order of the Batracians, and to the family *Anoura*, has particularly caught my attention : M. Boué (Guide du Géol. vol. ii. p. 259) notices indeed, in the tertiary formations, the presence of some reptiles, such as salamanders, frogs and ophidians ; but as he does not enter into any details, either of their description or the localities in which they have been found, the palæontologist will perhaps read with interest some details respecting the species in my possession. Its dimensions are as follows :—

	Millimetres		Millimetres
Total length of the body, including the head	32	Cubitus and radius	
Great diameter of the head ...	13	truncated in part	
Transversal diameter	8	Femur	12
Diameter of the sternum at the origin of the anterior feet ...	9	Tibia	12
Length of the humerus	6	Tarsus	7
		Toe of the posterior foot	5

The body of this species, which I shall name *Rana aquensis*, is not so plump as that of the common frog ; its head, although as flat, is more elongated, and is terminated by a snout which describes an al-

most perfect oval. The bones of the hind feet are proportionably longer, although less strong; lastly, its form is much more slender than that of the other Anourous Batracians, and may belong as well to the Frogs properly so called as to the Tree-frogs (*Hyla*), which differ from the former only in the extremity of each of their toes, which is enlarged and rounded into a kind of viscous swelling. But, as may be imagined, this character has not been preserved. The *Rana aquensis* has preserved a portion of its skin; there is scarcely any part but the feet which has been deprived of it, and these are represented by the bones which form their skeleton. As may be judged by its dimensions, this fossil frog is small, and its form is far from corresponding to the idea which we may form of the tertiary fauna of Aix, if we imagine it among the palm-trees, the crocodiles and other animals which have left their remains in the gypsiferous marls.

It is well known, that when the discovery of a diurnal lepidopterous insect in the same formation was announced to the Entomological Society of Paris, M. Boisduval, one of the most celebrated entomologists in Europe, considered the fact as so novel, that he would not credit it until he had examined the specimen. As this discovery has passed, we may say, unnoticed, I shall be pardoned for entering into some details on the almost miraculous occurrence which enabled M. Boisduval not only to recognise the genus to which this butterfly belonged, but also to determine its species with the greatest ease. As the opinion of this naturalist perfectly agrees with the ideas which I have previously entertained and published on the probable temperature of the globe at the period of the deposit of the gypsums of Aix, I cannot resist supporting my opinion by such an authority, especially as M. de Serres (*Géognosie des Terrains Tertiaires*, p. 220, &c.) states that the genera of fossil insects of that locality are mostly identical with those which now inhabit Provence and more southern climates, as Sicily and Calabria; and as M. Boué (*Guide*, ii. p. 286) says that it is well-known that the fossil plants and fishes of Aix are most nearly related to the vegetables and marine fishes of Provence, whilst it has been proved that the gypsiferous marls of Aix are essentially of a lacustrine origin, and that no maritime plant or animal has ever been discovered there. Mr. Curtis (*Edinburgh New Phil. Journal*, Oct. 1829) in the same manner refers all the specimens from Aix to still existing forms. Now as the gypsums of Aix are inferior to the marine molasses of the central beds, containing animals the greater part of whose genera only live in the tropical regions, the occurrence in a lower stratum of species still existing in the country or in the adjoining countries, established a fact of anomalous distribution, and a contradiction, not only to almost all known facts, but also to the presence in the same stratum of crocodiles, palm-trees, and other species of warm climates. We must therefore consider the conclusions advanced by the naturalists whom we have cited as the result of erroneous determinations, into which the specialty of M. Boisduval has prevented his falling. That entomologist discovers, "that the most common species of insects of the gypsiferous beds of Aix

are a species of Diptera of the genus *Bibio* or *Cecidomya*, several species of *Tipularia*, large *Curculionites* allied to the *Otiorynchus*, larvæ or nymphs of *Libellula*, *Blatta*, *Ichneumonida*, *Formicida* and *Arachnida*. All these fossils belong to extinct species, but their genera, which still exist, do not occur in Europe.

“The diurnal lepidopterous insect belongs to one of those genera the species of which are not numerous, and are at present confined to the islands of the Indian Archipelago or the warmest countries of the Asiatic continent. According to M. Blum of Leyden, they hover around the palm-trees, on which perhaps they feed in the state of caterpillars. The individual which has been named *sepulta*, to recall its antediluvian origin, belongs to the genus *Cyllo*, and is allied to the *Rohria*, *Camnus*, and other neighbouring species; but it cannot be referred to any of those known at the present day.

“The outline and form of this insect are so well-preserved, that one might imagine it lithographed on a schist: only the right side is alone preserved, which is perfectly untouched, with a portion of the thorax and a slight impression of the abdomen. The upper wing is in great part hidden by the under one, and it is impossible to say whether it presents other delineations than an apical ocellus surmounted by a white point; the other, the whole surface of which is seen, is of a brownish gray colour, as in the allied species, with a white costal spot, a sinuated, median transverse band, of the same colour, followed by two black ocelli bordered in white, connected exteriorly with two white spots. The extremity of this same wing is rather paler, almost whitish, and divided, as in most of the living species, by two parallel brown marginal lines. The caudal appendix is rather longer than in the *Rohria*, but situated in the same manner. The preservation of the specimen admits of distinguishing the outline, and probably the true colour of the butterfly as it was before its incrustation.”

I am not sufficiently acquainted with the species of exotic frogs to be able to compare them with the *Rana aquensis*, but I can assert that it differs entirely from those which exist in Europe. I await a favourable opportunity to allow me to describe and publish the fossil insects which for the last ten years I have collected in the gypsiferous beds of Aix; the number of the species I possess at the present time amounts to more than sixty.—*Bulletin de la Société Géologique de France*, April 21st, 1845.

On a curious appearance presented by the contents of the Capsules of a Moss from Chili, extracted from a Letter to the Rev. M. J. BERKELEY, by Dr. MONTAGNE.

“I was engaged in describing for the Cryptogamic flora of Chili a new genus allied to *Weissia*, and in consequence was desirous of ascertaining the form and structure of the spores in the species which I had before me. What was my surprise to find, instead of spores in every capsule which I opened, a kind of gemmæ analogous to those which occur in the cups of *Marchantia*! They have not indeed the